

上海磨床研究所主办

ISSN 1009 - 962X

CN 31 - 1858/TP

# 精密制造与自动化

1  
2023

JINGMI ZHIZAO YU ZIDONGHUA

PRECISE MANUFACTURING & AUTOMATION

1965年创刊

总第233期(季刊)



ISSN 1009-962X



9 771009 962231



02>

上海机床厂有限公司

公司地址:上海市军工路1146号

精密制造与自动化

JINGMI ZHIZAO YU ZIDONGHUA

(原名《磨床与磨削》)

2023年2月25日出版

季刊

2023年第1期

(总第233期)

主管 上海电气控股集团有限公司

主办 上海磨床研究所

支持单位 中国机床工具工业协会磨床分会

全国机械动力学学会

编辑出版 《精密制造与自动化》编辑部

主编 杜雄

执行主编 毕文耀

责任编辑 阮浩

英文编辑 顾国栋

总发行 上海市报刊发行局

订购处 全国各地邮政局(所)

印刷 上海盛通时代印刷有限公司

发行范围 公开

邮发代号 4-374

出版日期 季中25日

每册定价 12.00元

中国标准 ISSN 1009-962X

连续出版物号 CN 31-1858/TP

联系我们

地址 上海市军工路1146号

邮政编码 200093

电话 (021) 55223435

电子信箱 jm@smtw.com

jm@sgmri.com

创刊日期 1965年

目次

报道与评述

面向机床健康状态的智能评估云服务实现 ..... 芦华(1)

试验与研究

基于FANUC机床数控系统界面软件二次开发的研究 .....

..... 顾凯端(8)

基于ANSYS的圆柱形衔铁电磁学有限元分析 .....

..... 陈兵 胡银芬(14)

主轴单元性能评价装置设计及结构优化 ..... 杜雄(20)

设计与开发

外圆磨床导轨润滑系统的设计优化 ..... 吴蓓晔(24)

基于DOE方法的感应线圈电感分析与优化 .....

..... 张博实 陆志强(29)

浅析便携式导轨表面淬火装置的研制 ..... 刘剑荣(34)

制造业信息化

基于UG软件的弧面凸轮机构运动仿真分析 ..... 龙勇云(37)

电测仪表计量检定工作质量自动评估模型构建 .....

..... 盛杰 刘鹏(40)

CAXA CAD 电子图板的二次开发方法与应用 .....

..... 张闾 李雪飞(44)

工艺与装备

基于数控磨床闭环位置反馈实现大型零件带锥表面配磨 .....

..... 李云龙(51)

浅析地铁屏蔽门控制系统的应用 ..... 圣祝素(54)

外圆磨床尾架液压油缸流量与压力参数的应用 ..... 栾卿(58)

汽轮机叶槽加工工艺优化 ..... 马海涛(62)

# 精密制造与自动化

PRECISE MANUFACTURING &amp; AUTOMATION

(Original Name: *Grinder & Grinding*)

Published on February 25, 2023

Quarterly

No. 1

(Sum 233)

Administrated by:  
Shanghai Electric Holding Group Co., Ltd.

Sponsored by:  
Shanghai Grinding Machine Research  
Institute

Supported by:  
Grinder Branch of China Machine Tool &  
Tool Builders' Association  
Academy of National Mechanical  
Dynamics

Published by:  
*Precise Manufacturing & Automation*  
Editorial Office  
Editor-in-Chief: DU Xiong  
Executive Editor: BI Wenyaoyao  
Editor: RUAN Hao  
English Editor: GU Guodong

Distributor:  
Shanghai Newspaper Periodical  
Distribution Bureau  
Subscription Agent: Post Office  
Printed by: Shanghai Shengtong Times  
Printing Co., Ltd  
Distributed Range: China and Abroad

Post Distribution Code: 4-374  
Issue date: 25th Feb., May, Aug., Nov.  
Unit Price: 12.00 RMB

International Standard Serial Number  
ISSN 1009-962X

## Contact Us

Address: No.1146 Jungong Road,  
Shanghai, China  
Postcode: 200093  
Tel: +86-21-55223435

E-mail: jm@smtw.com  
jm@sgmri.com

## Contents

### Report & Review

Realization of Intelligent Evaluation Cloud Serving for Machine Tool  
Health Status ..... LU Hua (1)

### Test & Research

Research of the Secondary Development Based on the Interface  
Software for FANUC Machine Tool CNC System ..... GU Kai-duan (8)  
Finite Element Analysis of Cylindrical Armature Electromagnetism Based  
on ANSYS ..... CHEN Bing, HU Yin-fen (14)  
Design and Structural Optimization of Performance Evaluation Device for  
Spindle Unit ..... DU Xiong (20)

### Design & Development

Design Optimization of Lubrication System for Cylindrical Grinding  
Machine Guideway ..... WU Bei-ye (24)  
Inductance Analysis and Optimization of Induction Coils Based on DOE  
Method ..... ZHANG Bo-shi, LU Zhi-qiang (29)  
Analysis on the Development of Portable Guideway Surface Quenching  
Device ..... LIU Jian-rong (34)

### E-manufacturing

Kinematics Simulation Analysis of Globoidal Cam Mechanism Based on  
UG Software ..... LONG Yong-yun (37)  
Construction of Automatic Evaluation Model for the Quality of the  
Metrological Verification of Electrical Measuring Instruments .....  
..... SHENG Jie, LIU Peng (40)  
Secondary Development Method and Application of CAXA CAD  
Electronic Board ..... ZHANG Tian, LI Xue-fei (44)

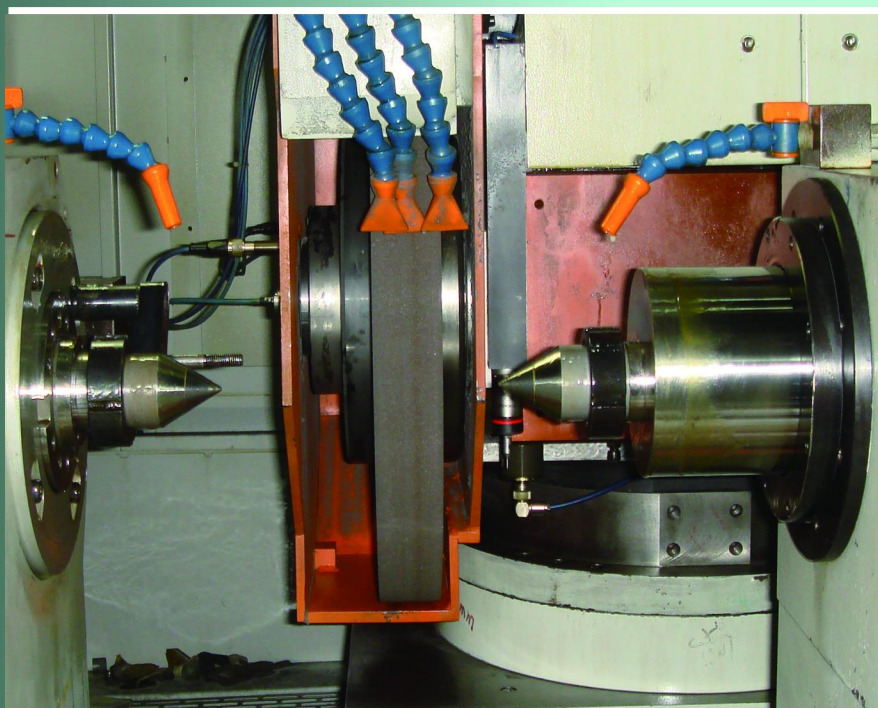
### Process & Equipment

Realization of Pair Grinding of Large Parts with Conical Surface Based on  
Closed Loop Position Feedback of CNC Grinding Machine .....  
..... LI Yun-long (51)  
Analysis of the Application of Subway Screen Door Control System .....  
..... SHENG Zhu-su (54)  
Application of Flow and Pressure Parameters of the Tailstock Hydraulic  
Cylinder of Cylindrical Grinding Machine ..... LUAN Qing (58)  
Processing Technology Optimization for Blade Slots of Steam Turbine ....  
..... MA Hai-tao (62)



入编中国学术期刊（光盘版） 入网《万方数据-数字化期刊群》

# JINGMI ZHIZAO YU ZIDONGHUA



国内刊号：CN31-1858/TP 邮发代号：4-374 定价：12.00元